



# **Proposed Changes to the ERP Guidebook, Sixth Edition**

Renewables Committee  
Workshop

December 5, 2005

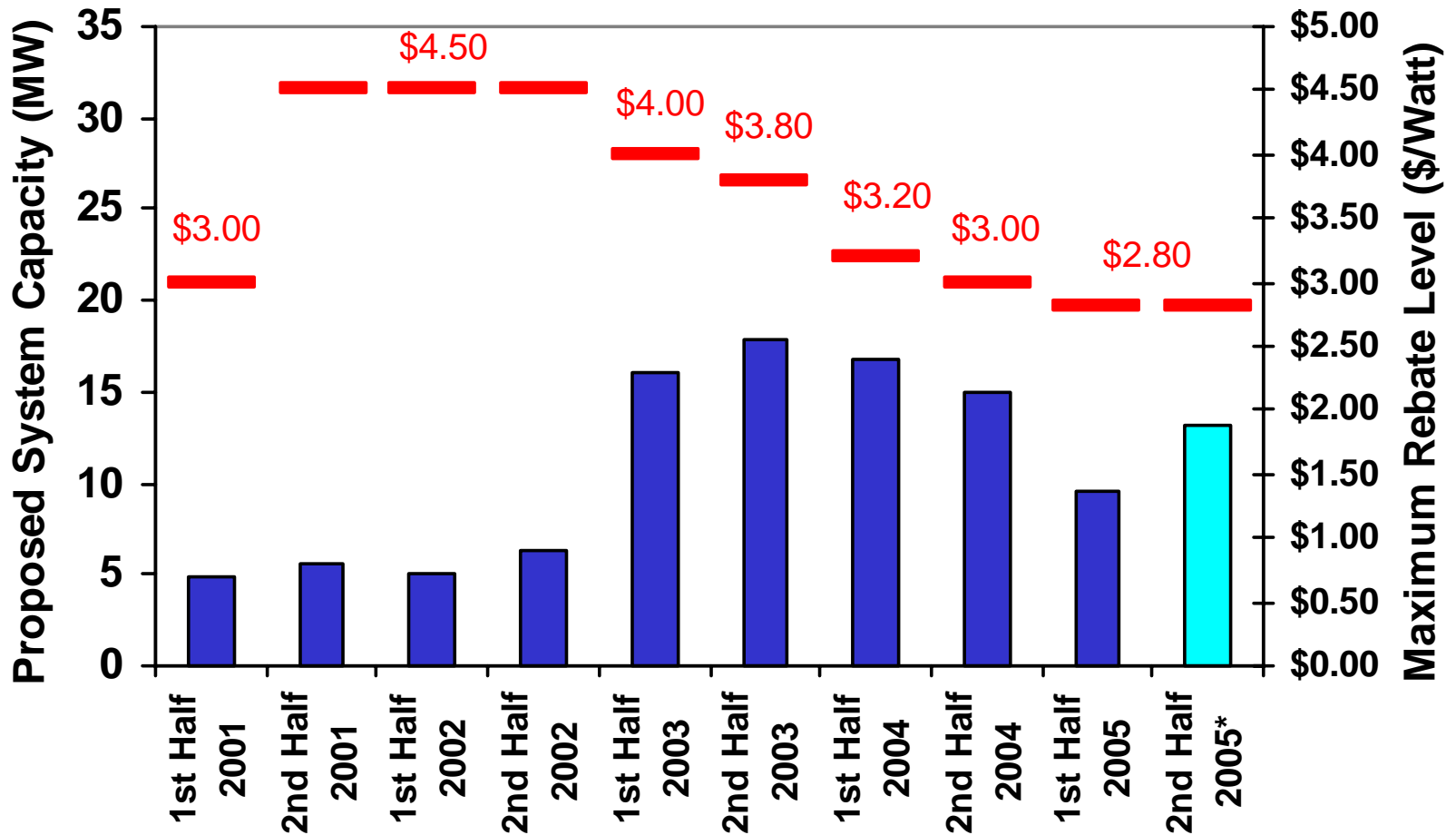


# Today's Agenda

- ERP status and overview
- Proposed guidebook changes
- Proposed rebate structure
- Public comment
- Comments from the phone



# Applications vs. Rebate Level





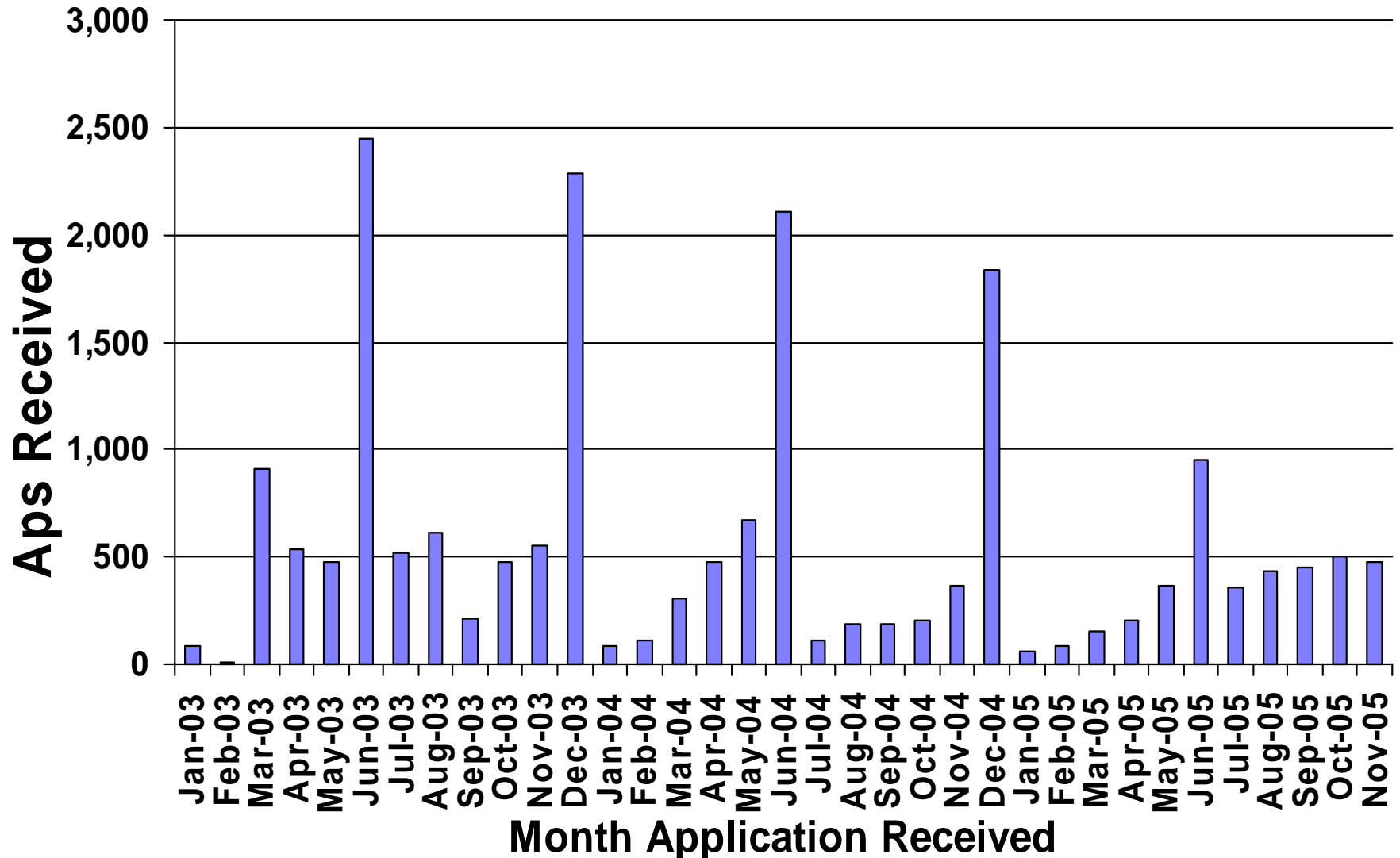
## Systems Installed Through the Emerging Renewables Program

<b><i>Year</i></b>	<b><i>Number</i></b>	<b><i>MW</i></b>	<b><i>Paid</i></b> <b><i>(Millions)</i></b>
1998	41	0.18	\$ 0.5
1999	197	1.06	\$ 2.9
2000	235	0.80	\$ 2.2
2001	1,292	4.29	\$16.9
2002	2,331	8.50	\$36.1
2003	3,022	12.90	\$52.2
2004	4,615	19.15	\$69.3
2005*	3,443	15.14	\$47.2
<b>Total</b>	<b>15,176</b>	<b>62.0</b>	<b>\$227.3</b>

*\* Updated November 8, 2005*



# ERP Applications Requested





# Participation by Size Category

		1 to 10 kW		10 to 20 kW		20 to 30 kW	
	<b>Rebate</b>	<b>Number</b>	<b>MW</b>	<b>Number</b>	<b>MW</b>	<b>Number</b>	<b>MW</b>
<b>Jan-Jun 2001</b>	\$4.50	874	2.6	10	0.1	4	0.1
<b>Jul-Dec 2001</b>	\$4.50	1047	3.4	27	0.3	12	0.3
<b>Jan-Jun 2002</b>	\$4.50	1047	3.4	8	0.1	2	0.0
<b>Jul-Dec 2002</b>	\$4.50	1152	4.0	26	0.3	2	0.1
<b>Jan-Jun 2003</b>	\$4.00	2863	10.2	148	2.0	42	1.1
<b>Jul-Dec 2003</b>	\$3.80	3113	10.8	204	2.7	39	0.9
<b>Jan-Jun 2004</b>	\$3.20	2713	10.3	202	2.6	67	1.8
<b>Jul-Dec 2004</b>	\$3.00	2021	8.1	185	2.5	74	1.9
<b>Jan-Jun 2005</b>	\$2.80	1346	5.5	77	1.0	37	1.0
Excludes Solar Schools and disapproved applications							



## Average Installed PV System Price\*

Year	Size (W)	\$/W	Net Cost
2001 –	3,283	\$10.01	\$5.75
2002 –	3,676	\$9.85	\$5.64
2003 –	4,154	\$8.91	\$5.36
2004 –	4,522	\$8.59	\$5.75
2005 –	4,319	\$8.58	\$5.94

\*by year received 1 to <30 kW



# Solar Schools Status

- Paid \$476,000 for 4 schools
- Half from AGAERA,\* half from Renewable Resources Trust Fund
- \$3.9M remaining reserved
- Still no funding available for NEW projects

\*Attorney General's Alternative Energy Retrofit Account





# Pilot Performance-Based Incentive Program

- One PV system installed and quarterly payments started
- Received about 20 PBI applications to date
- Approximately 75% are commercial projects, 3 residential, 2 industrial (not commercial or residential)
- Approximately \$6.5 million funds remaining of \$10 million budgeted
- Applications total 1,060 kW capacity requested



# Wind Systems Approved/Paid by Year

New wind applications are declining

Year	# of systems	kW
2001	114	477
2002	66	381
2003	44	385
2004	18	166
2005 (to Nov.)	7	56
<b>Total</b>	<b>249</b>	<b>1465</b>



# Internal Program Changes and Improvements

- Increased hours and staffing for Call Center
- Provided customer service training
- We will be working in coming months to reduce backlog for processing both reservation applications and payment claims



# Guidebook Schedule\*

- ✓ Draft ERP Guidebook online Nov. 23
- ✓ ERP Workshop Dec. 5
- Post-Workshop Draft Guidebook Jan. 3
- Business Meeting Jan. 18
- Mail Notice of Availability ~Jan. 23

\* Tentative



# Extend Reservation Period

- Reservation period now 6 mo., no extensions going forward (beginning Jan. '05)
- Received complaints that 6 mo. with no extensions is too short
- Changing reservation period from 6 to 9 mo., maintaining 18 mo. for new construction
- Providing current 6 mo. reservations automatic 3 mo. extensions
- 18 mo. reservations may qualify for up to 6 mo. extensions under the conditions specified in the guidebook version in place at the time the reservation was issued



# Affordable Housing

- Energy efficiency requirement (10% higher) for affordable housing projects
- Confusion about requiring “certified” energy auditors as guidebook does not specify
- Adding language requiring CABEC certified inspectors

*“Applicants must provide the energy efficiency calculations performed by an individual certified by the California Association of Building Energy Consultants.”*

(VIII. Special Funding)



# PBI Reservation of Funds

Current 30% capacity factor used to determine reservation amount is very high, causing a large gap between reserved funds and actual payout.

- 1) This locks up funds unnecessarily for several years
- 2) And, reduces the size of the projects that can apply

- Capacity factor ave. ~17%

**Example:** reserve \$400K, receive \$228K  
= \$172K encumbered, but unspent funds

- Lower capacity factor to 20%, but keep 30% CF for systems with tracking mechanisms

**\*Capacity Factor** — The ratio of the average load on (or power output of) an electricity generating system to the capacity rating of the system over a specified period of time.



# PBI

- Current guidebook does not specify if PBI and ERP incentives can be provided at same site, if separate systems
- Specify ERP rebate and PBI requires separate systems, with separate meters

**Note:** *Guidebook states that PBI will undergo program review after 12 months. Staff will be developing this early next year.*

(Chapter VIII, Special Funding)





# System Modifications

- For active reservations, guidelines often reduce rebate with system additions below current rebate level
- **Example:** System additions are treated by recalculating the entire system capacity at current (lower) rebate and given the higher of this or the original amount - this often gives no additional rebate for a system addition
- Applying current rebate level for incremental portions (simplifies calculation; removes penalty)

(VI. Modifications or Changes to Reservations)



# Adding to Existing System

- Current guidebook treats adding to existing systems by applying previous rebate, thereby lowering available rebate
- For example: 1000W addition may get \$2,310, not \$2,800 at current \$2.80/W

Current rebate level will be provided with no adjustment/reduction for systems that received ERP rebate months or years ago.

(Appendix 5, Section D)



# Minor Changes

- Clarify Site definition

Corrected definition of site and systems (p.11). For projects with over 5 high density units and separate meters, each unit can be up to <30kW cap.

- Clarify System definition

Clarified rebate to applicants applying for other rate payer programs, such as the Self Generation Incentive Program, using the same site (part of it is from ERP and part of it is SGIP).



# Minor Changes

- Clarify System size category  
Adding language wind size limit is also less than 30kW.
- Remove R5 section in the R1 form  
Asking for payment assignment on the R1 application form is not necessary. In addition, the same information is asked at payment claim time which is more appropriate. Causes confusion and inconvenience.



# Changes in Tax Credits

- New federal tax credits provided through the Energy Policy Act of 2005 can provide substantial benefit for commercial and small residential program participants
- Kema, our contractor, analyzed various scenarios to consider rebate implications and is summarized here
- This will be available at a later date for release and discussion, but we are limiting our discussion today



# PV Rebate, Modeling Assumptions

	Baseline Case	EPAct 2005 Case
<b>CBI Amount</b>	\$2.60/W	solved for
<b>State Tax Credit</b>	7.5% for all	0%
<b>Federal Tax Credit</b>	Res.: 0% Corp.: 10% (no cap)	Res.: 30% (\$2000 cap) Corp.: 30% (no cap)
<b>System Cost</b>	1 kW: \$10,000 (\$10/W); 2 kW: \$18,000 (\$9/W) 6 kW: \$51,000 (\$8.5/W); 30 kW: \$240,000 (\$8/W)	
<b>System Performance</b>	1500 kWh/kW (17.1% capacity factor)	
<b>Avoided Electr. Cost</b>	\$0.15/kWh, with nominal escalation of 3%/yr	
<b>Residential Tax Rates</b>	28% federal, 9.3% state	
<b>Corporate Tax Rates</b>	34% federal, 8.84% state	
<b>Loan Details</b>	15-year term, 7% interest rate	
<b>Project Life</b>	25 years	
<b>Nominal Disc. Rate</b>	7%	



# CBI Results (Cash-Financed, Taxable)

Incentive Type		Capacity-Based Incentive (CBI)						
Customer Type		Residential			Corporate		Tax-Exempt	Subject to AMT
Syst. Size		1 kW	2 kW	6 kW	6 kW	30 kW	all sizes	all sizes
\$/W CBI that creates after-tax parity with Baseline	A	0.57	1.77	2.58	0.95	1.03	2.60	2.60
	B				0.85	0.94		
	C				1.00	1.09		
	D				0.90	0.99		

- A. Federal ITC reduces basis for both the state ITC and state depreciation
- B. Federal ITC reduces basis for the state ITC, but not for state depreciation
- C. Federal ITC doesn't reduce basis for state ITC, but does reduce basis for state depreciation
- D. Federal ITC doesn't reduce basis for either the state ITC or state depreciation



# Analysis Conclusions

- **Residential Owner: *Small*** systems (e.g., < 3kW) benefit greatly from \$2000 ITC
- **Commercial Owner:** Sizable reductions in rebate levels are possible at ***all*** system sizes
- **Tax-Exempt Owner:** Any reduction in rebate levels will hurt PV economics
- **Taxable Owner Subject to AMT:** Any reduction in rebate levels will hurt PV economics





# Rebate Level Proposed

• Photovoltaic	<30 kW	\$2.60/watt
• Solar Thermal Electric	<30 kW	\$3.20/watt
• Fuel Cells*	<30 kW	\$3.20/watt
• Wind	$\leq 7.5$ kW	\$1.70/watt
• Wind	>7.5 kW & <30 kW	\$0.70/watt

(PV drops \$.20/W, no change for rest)

*\*With renewable fuel*



# We Welcome Your Comments

Written comments may also be submitted to the  
Docket's Office

Deadline: Close of Business Dec. 7, 2005

*California Energy Commission*

*Re: Docket No. 02-REN-1038*

*Docket Unit, MS-4*

*1516 Ninth Street*

*Sacramento, CA 95814-5504*

*E-Mail: [docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)*